REMARKS

This is in response to the Office Action mailed on <u>December 27, 2006.</u>

Claims 1 and 30 are amended, and no claims are added; as a result, claims 1-28 and 30-33 are now pending in this application.

§101 Rejection of the Claims

Claims 1-15 and 30 were rejected under 35 USC § 101 because the claimed invention is directed to non-statutory subject matter. Applicants have amended independent claims 1 and 30 to refer to computer-implemented methods, and to result in physical transformations, i.e., storing the found nearest cluster of bad actors in a storage device. Therefore, amended independent claims 15 and 30 produce useful, concrete, and tangible results, thus are directed to statutory subject matters. Claims 2-15, directly or indirectly, depend on claim 1, thus for at least the same reasons discussed for claim 1, are directed to statutory subject matters. Applicants respectfully request the withdrawal of §101 rejection of claims 1-15 and 30.

§102 Rejection of the Claims

Claims 1-3, 6, 8, 16-18, 21 and 30 were rejected under 35 USC § 102(e) as being anticipated by Hsiung et al. (USPN 6,853,920). Applicants reserve the right to swear behind this reference at a later date. Applicants respectfully traverse this rejection for the reasons stated below.

Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration. *In re Dillon* 919 F.2d 688, 16 USPQ 2d 1897, 1908 (Fed. Cir. 1990) (en banc), cert. denied, 500 U.S. 904 (1991). It is not enough, however, that the prior art reference discloses all the claimed elements in isolation. Rather, "[a]nticipation requires the presence in a single prior reference disclosure of each and every element of the claimed invention, *arranged as in the claim.*" *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984) (citing *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)) (emphasis added).

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Now, claim 1 recites, with emphasis added:

> "1. A computer implemented method of identifying events in a process, the method comprising:
> running a principal component analysis model on sensor data from the process;
> calculating statistics related to the model;
> determining if an event is occurring;
> **finding a nearest cluster of bad actors related to the event to identify the event; and**
> storing the found nearest cluster of bad actors in a storage device."

The Office Action cites col. 21, lines 44-49 of Hsiung as disclosing "**finding a nearest cluster of bad actors related to the event to identify the event**" as recited in claim 1. Applicants respectfully disagree. Referring to col. 21, lines 44-49 relied upon by the Office Action,

> "8. If yes, remove **bad data** using, for example PCA;
> 9. Find important sensors using importance index (individual filtering process);
> 10. Normalize;
> 11. Find appropriate pattering recognition process;" (emphasis added)

The above quoted sequence of steps of Hsiung relates to creating a training set. At 8, e.g., where "determine outlier?" is "yes", "**bad data**" is removed using PCA. Clearly, the above quoted language of Hsiung does not disclose **finding a nearest cluster of bad actors related to the event to identify the event in a process**, but instead removes bad data using PCA in order to create a training set. Thus, Hsiung adopts an entirely different approach to a very different problem. Thus, for at least this reason, Hsiung does not disclose each and every element of independent claim 1, accordingly does not anticipate independent claim 1.

Independent claims 16, 30 and 31 have the same element "**finding a nearest cluster of bad actors related to the event to identify the event**" as claim 1. Thus for at least the same reason discussed for claim 1, Applicants submit that Hsiung does not anticipate these independent claims. Claims 6, 8, 17, 18 and 21 respectively depend on claim 1 or 16. Thus, for at least the same reason discussed for claim 1, Applicants submit that Hsiung does not anticipate these dependent claims.

Claim 2 recites, with emphasis added:

"2. The method of claim 1 wherein finding a nearest cluster of bad actors comprises **comparing the bad actor vectors to known clusters in a library of clusters for bad actors.**"

The Office Action indicates that Hsiung teaches a nearest cluster of bad actors comprises comparing (col. 1, line 23) the bad actor vectors to known clusters in a library (col. 6, lines 8-9) of cluster for bad actors (col. 1, lines 21-26). Applicants respectfully disagree. Referring to the citations, with emphasis added:

> "Embodiments of the present invention relate to techniques for monitoring and/or controlling complex processes by **comparing the current state of a first process to current, historical, and/or predicted states of the first process or a second process using statistical, structural, or physical models.**"
> (col. 1, lines 21-26).

> "Database 106 may also include **a library of different algorithms or models** that may be used to monitor and control industrial process 121. Alternatively, **such a library of algorithms or models** may be resident on server 113."
> (col. 6, lines 8-9)

Clearly, the above quoted language of Hsiung does not disclose **a library of clusters for bad actors**, instead only discloses **a library of algorithms or models**. Furthermore, it does not disclose **comparing the bad actor vectors to known clusters in a library of clusters for bad actors** as recited in claim 2. Claim 2 depends on claim 1. Thus, for at least this reason and the same reason discussed for claim 1, Hsiung does not disclose each and every element of claim 2, accordingly does not anticipate claim 2.

Claim 3 recites, with emphasis added:

> "3. The method of claim 1 and further comprising for new bad actors:
> **identifying a sequence of cluster matches;** and
> **correlating the sequence of cluster matches to known events.**"

The Office Action indicates that col. 1, lines 23-25 of Hsiung teaches **identifying a sequence of cluster matches, and correlating the sequence of cluster matches to known events** as recited in claim 3. Applicants respectfully disagree. Referring to the citation:

"controlling complex processes by comparing the current state of a first process to current, historical, and/or predicted states of the first process or a second process using statistical, structural, or physical models."
(col. 1, lines 23-25).

Clearly, the above quoted language of Hsiung does not mention "**cluster matches**". Furthermore, it does not disclose **identifying a sequence of cluster matches** and **correlating the sequence of cluster matches to known events** as recited in claim 3. Claim 3 depends on claim 1. Thus, for at least this reason and the same reason discussed for claim 1, Hsiung does not disclose each and every element of claim 3, accordingly does not anticipate claim 3.

Therefore, Applicants respectfully request reconsideration and allowance of claims 1-3, 6, 8, 16-18, 21 and 30.

Allowable Subject Matter

Claims 4-5, 7, 9-15, 19-20 and 22-28 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant acknowledges the allowance of claims 4-5, 7, 9-15, 19-20 and 22-28, and believe that the above discussion for the base claims has overcome the objection. Applicant respectfully request allowance of claims 4-5, 7, 9-15, 19-20 and 22-28.

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Reservation of Rights

In the interest of clarity and brevity, Applicants may not have addressed every assertion made in the Office Action. Applicants' silence regarding any such assertion does not constitute any admission or acquiescence. Applicants reserve all rights not exercised in connection with this response, such as the right to challenge or rebut any tacit or explicit characterization of any reference or of any of the present claims, the right to challenge or rebut any asserted factual or legal basis of any of the rejections, the right to swear behind any cited reference such as provided under 37 C.F.R. § 1.131 or otherwise, or the right to assert co-ownership of any cited reference. Applicants do not admit that any of the cited references or any other references of record are relevant to the present claims, or that they constitute prior art. To the extent that any rejection or assertion is based upon the Examiner's personal knowledge, rather than any objective evidence of record as manifested by a cited prior art reference, Applicants timely object to such reliance on Official Notice, and reserves all rights to request that the Examiner provide a reference or affidavit in support of such assertion, as required by MPEP § 2144.03. Applicants reserve all rights to pursue any cancelled claims in a subsequent patent application claiming the benefit of priority of the present patent application, and to request rejoinder of any withdrawn claim, as required by MPEP § 821.04.

Conclusion

Applicants respectfully submit that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicants' attorney at (612) 373-6972 to facilitate prosecution of this application.

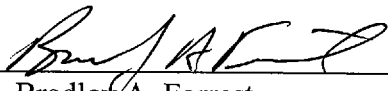If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

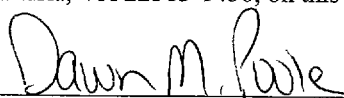Respectfully submitted,

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this _7th_ day of March, 2007.

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